

That the low temperature is actually due to a hypothermogenic substance was demonstrated by injecting serum of a febrile tuberculous patient into other afebrile tuberculous persons. The result was that the temperature sank lower in these patients than the author had ever observed before. Mircoli studied the temperatures in the rectum and axilla, and found a greater difference than the half degree Centigrade usually considered normal. It often amounted to 1° and sometimes as much as 2° C. This difference is not constant at different times of the day in the same patient, but is usually less in the morning and greater in the afternoon. Mircoli found an inverted type of temperature very rarely in tuberculosis, and does not think there is any particular type for the latent fever. The sweating of tuberculosis has sometimes been considered a consequence of rise of temperature. Careful observation, however, proves that this is not so, and Maragliano was able to find an ethereal extract of tuberculous toxin which produced sweating without affecting the temperature. Chetrien, who studied the subjective fever of tuberculous patients, found that in some of them there was a subjective feeling of fever, although the temperature in the axilla was not elevated. To sum up, the author holds that the thermal level in tuberculosis is somewhat lower than in health—i. e., from 2° to 5° C.; that the difference between the internal and external temperatures is greater, on the average 1° C.; that the sensibility to internal and external thermogenic factors is increased; that there are thermopsychic phenomena which indicate the transition from the latent to the manifest form of tuberculosis. Studies in metabolism parallel to the preceding observations are promised.

SURGERY.

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Partial Retention of Urine, Its Consequences and Treatment.—WARDEN (*Edinburgh Medical Journal*, July, 1899) points out the fact that an incompletely emptied bladder is a difficult condition to diagnose, and yet it is all important that early treatment should be instituted, which will prevent the complications which follow this condition if it remains undetected and untreated. The ensemble of symptoms is, however, so complete in these cases that when once found the diagnosis is absolute. Prostatic enlargement is the disease which produces most of the cases of partial retention, and yet it is often not until there is complete retention that the patient complains of

any symptoms referable to the bladder. The recognition of the early symptoms is, therefore, very essential. They are nocturnal polyuria and persistent digestive troubles. Bimanual rectal examination will clear the diagnosis, while the catheter will prove it beyond a doubt. Care should be taken not to empty the bladder too rapidly. This may be done very gradually, and yet completely, by stopping before it is empty, injecting warm boric-acid solution, and again partially emptying, repeating the process until the urine comes away clear. The golden rule is to empty the bladder often, for long and aseptically. If the early period of prostatic enlargement be tided over successfully one may hope to be spared the greater anxiety of later complications.

When the stagnation of urine becomes so prolonged and extreme as to be accompanied by positive distention of the bladder it forms the most serious and most intractable, and yet the most overlooked, of all forms of partial retention of the urine. The central fact of the condition is the distended state of the bladder, which makes itself felt throughout the whole of the urinary tract, from the ureters to the parenchyma of the kidneys themselves; the disorders thus set up, at first functional, soon become organic, and as there is yet no infection, and, therefore, no cystitis, there is nothing beyond some frequency of micturition to direct attention to the urinary apparatus. The patient's tongue is red and dry, and coated to such a degree that swallowing and even mastication become intolerably distasteful. Vomiting and diarrhoea may set in, or the dyspepsia may express itself simply in loss of appetite and headache and a sense of gastric weight. On the other hand, constipation of most obstinate form may be the predominant feature of the digestive disturbances. The whole system may present an appearance that would make a diagnosis of cancer of the stomach possible. The patient will be found to be passing large quantities of urine, and the author says "it cannot be too dogmatically stated that when the three symptoms—polyuria, frequency of micturition, and grave digestive troubles—are present the *fons et origo mali* is almost certain to be the bladder that the patient cannot empty." The greatest care should be taken in these cases to keep the bladder empty and not to infect it with the catheter.

Wounds of the Heart and Pericardium.—LOISON (*Rev. de Chir.*, 1899, Nos. 1, 2, 6, and 7) reaches the following conclusions, after an exhaustive study of this subject, in which he reviews all the literature and tabulates all the reported cases.

1. The symptom-complex of wounds of the heart and pericardium is no less certain than that of the peritoneum or of certain abdominal viscera.
2. The diagnosis is as difficult and as delicate in the one case as in the other, and requires all the surgeon's vigilance.
3. The prognosis is not always grave, as the statistics which the author has collected and Fischer's show.
4. Therapeutics are not unavailing, as has been proved by numerous successful interventions which have lately been carried through by various surgeons.

The author has tried to show that there is a greater field for active intervention, and that such intervention has a chance of success.

Shock in Modern Surgery.—SHRADY (*Medical Record*, July 22, 1899) points out very clearly the great danger that threatens modern surgery. The perfection to which aseptic technique has been developed makes it possible for almost any practitioner to perform major operation. The patient is under the anæsthetic and feels nothing; asepsis secures primary reunion, so that the operator can take all the time he desires, and if the patient dies it is attributed to shock, for the wound is aseptic and there has been no great loss of blood.

This author points to the difference between modern and the former age of surgery, where brilliant operators, with perfect technique and lightning rapidity, operated without anæsthesia or antiseptics, and secured wonderful results. They could not depend upon anæsthesia and asepsis to cover the defects of technique, but by the rapidity of their operations saved so much of the shock to the patient that his vitality could do more for him.

Shrady says: "We must not forget that prolonged administration of anæsthetics is, independently of the operation, a means of shock in itself. While ether may tend at first to modify shock, its prolonged use adds to the depression of the patient. The same may be said for chloroform. The bodily temperature is lowered if the administration of ether continues longer than an hour or an hour and a half. Often, especially in chloroform cases, the normal temperature is not restored until the lapse of twenty-four hours. This delayed reaction is itself an evidence of serious mischief done to the nervous centres. These changes are often sudden and correspondingly dangerous. Although more frequently seen with chloroform, they occur often enough with the safer anæsthetic—ether—to place us on our guard.

"It is not inconsistent with carefulness that we should do our work more quickly. We should shorten not only the period of anæsthesia, but that of the operation itself. To do whatever is absolutely necessary, and do that as quickly as possible, is the primary consideration. Of the two methods of procedure the one that takes the shortest time should always be preferred. In grave and prolonged operation, it is much safer to divide the work into two periods, if possible, rather than strain a point to finish it in one."

There is a certain larger amount of shock in all operations in highly nervous areas, as is evidenced by the extra amount of anæsthetic required. In the preanæsthetic days the effect of the division of a nerve or bone was seen immediately in the pulse. There can be no doubt but that there is still much of this shock felt by the system despite the anæsthesia. "Quick reaction follows quick operation. The two hold a proper relation to each other for good. On the contrary, the longer the operation the longer is the reaction delayed. How often do we hear that the patient failed to rally after hours of fruitless stimulation?"

A New Invagination Method of Intestinal Anastomosis.—MORISANT (*Centralblatt f. Chirurgie*, 1899, No. 32) describes a new method of anastomosis which he has employed with success in a number of cases, and has proved by experiments on animals to be technically efficient in all cases.

A strip of mucous lining is removed from the inner surface of the distal end of the intestine, so that it permits the proximal to be invaginated into it. When this has been accomplished it is held in place by fixation sutures,

while a continuous suture unites the cut end of the distal portion of the gut, with its raw muscular layer, to the serous surface of the proximal or invaginated portion. The process of invagination protects the stitches and the line of union in a degree from contamination by the intestinal contents, while strengthening it against pressure from within. The denuding of the muscular coat where it is brought in contact with the serous surface of the proximal portion in the line of union hastens the reparative process and frees the wound from the contamination of the intestinal contents. The histological examinations made on the experimental cases showed that firm adhesion is present in twenty-four hours, and that there is no contraction of the lumen of the gut. The method is free from the objections made where foreign bodies are employed, while the suture line is protected from infection from within the bowel.

Remarks on a Case of Total Extirpation of the Stomach and the Treatment of Gastric Cancer—RICHARDSON (*Boston Medical and Surgical Journal*, September 28, 1899) reports the findings at an autopsy in a case in which he removed the entire stomach. There was a recurrent mass at the left of the epigastrium, which had infiltrated the peritoneum under the rectus and had spread about the walls of the small intestines. There were nodular masses in the mesentery of both large and small intestines. Minute nodules were scattered everywhere. Near the splenic flexure the lumen of the colon was totally obstructed. Beyond this point the bowel was collapsed; above it was enormously distended. The orifice at the point of anastomosis was large enough for the passage of food, and the parts were firmly bound together. There was no sign of recurrence at the line of junction.

The author concludes from the case, first, that the patient's health would have been fully re-established had there been no recurrence of the original disease; second, that the suffering was due to the mechanical effects of a chronic obstruction rather than to cancer itself; finally, that œsophago-duodenostomy is technically possible in a certain percentage of cases.

As regards operation in cases of cancer of the stomach this author says: The first indication for operation is a strong suspicion that malignant disease is present. Even then operation is inadvisable in marked cachexia (other than hemorrhagic), and in such diseases of other organs as will compromise success—diseases of the heart, lungs, kidneys. The local lesion may be out of proportion to signs, or *vice versa*. Local signs that justify resections are circumscribed tumors without contiguous or remote implications. Infiltrating masses not sharply defined which approach contiguous viscera so that they must be closely shaved do not justify radical measures. When complete removal of the diseased tissue requires complete extirpation of the stomach there is no local contraindication if the operation is technically possible.

It seems clear that radical operations upon the stomach must necessarily be infrequent. A case favorable enough to justify so serious a measure as partial resection cannot often present features that are favorable as to time, extent, complications, and general constitutional excellence. If partial excisions are thus limited complete extirpations must be still more infrequently justifiable. The only method of discovering favorable cases for operation is earlier exploratory laparotomy.

The Wisdom of Surgical Interference in Hæmatemesis and Melæna from Gastric and Duodenal Ulcer.—ARMSTRONG (*British Medical Journal*, October 21, 1899) reports two cases which have called his attention to the result of delay in operating, which is in a great measure dependent upon the two conservative tendency reflected in the medical literature of to-day.

When aneurism and leukæmia have been excluded, which should be readily possible in the latter case by the aid of the microscope, he holds that it is the surgeon's duty to interfere in suitable cases, which he defines, first, as those of frequently repeated small hemorrhages which persist in spite of medical and dietetic treatment, and threaten to destroy the life of the patient; and, secondly, in all cases of large hemorrhage which, in spite of medical and dietetic treatment, recur. In these cases he advocates operation after the second hemorrhage. With hemorrhage occurring in cirrhosis and portal obstruction, he does not think that the surgeon can accomplish any good. In these cases the hemorrhage is from a varicose œsophageal vein, a part difficult of access, and is secondary to a pathological lesion but little amenable to any form of treatment.

In cases of gastric and duodenal ulcer, however, the conditions are totally different. The lesion is primary and local, and in addition to the securing of the bleeding point a more smooth and rapid convalescence is obtained, the likelihood of perforation removed, and if found advisable the performance of a gastro-enterostomy or pyloroplasty secures to the stomach that rest which so favors the healing of the ulcer and ensures against the subsequent occurrence of narrowing and obstruction to the pylorus.

The Technique of Gastro-enterostomy.—RUTKOWSKI (*Centralblatt für Chirurgie*, 1899, No. 39) has had very satisfactory results from combining with Wölfler's gastro-enterostomy a temporary gastrostomy by either Witzel's or Kader's method. After performing the gastro-enterostomy he makes a small incision above it and passes in through this a drainage-tube which is brought out of the abdominal wound after one of the above-mentioned methods of gastrostomy. The tube passes into the stomach, through the opening of the gastro-entero-anastomosis, down into the afferent portion of the jejunum.

The combination of these two operations in one affords an opportunity for the immediate nourishment of the patient without the danger consequent upon feeding by the mouth, while the gastric juices that collect in the stomach have every opportunity to pass along beside the tube into the bowel. After a lapse of ten days, when the patient has recovered from the operation and the union is complete, the drainage-tube is removed and the gastric fistula closes spontaneously.

The author briefly reports three cases in which this method of operating led to very satisfactory results.

Two Cases of Primary Sarcoma of the Tongue; one Pedunculated, the Other Interstitial—DOWNIE (*British Medical Journal*, October 21, 1899) reports two cases of this rare form of sarcoma—i. e., lingual. One was pedunculated and the other interstitial, with a marked involvement of surrounding structures.

He compares these two cases with the following results :

1. In the first the early discomfort was supposed to be due to a simple catarrhal inflammation of the throat, while in the second it was considered to be the result of injury.

2. The pedunculated growth did not involve the tissue of the tongue to any depth, while the tumor in the second case was situated deep in the substance of the tongue.

3. The growth of the neoplasm was in the first case rapid, and unaccompanied by œdema, while the interstitial tumor was of comparatively slow growth, and its presence was accompanied by considerable œdema of the organ.

4. The disease in the first case was confined to the tongue, while in the second case several secondary growths appeared at an early stage.

Osteoplastic Operation on the Mastoid Process.—KÜSTER (*Centralblatt für Chirurgie*, 1899, No. 43, p. 1145) describes an osteoplastic technique which he has employed with success for the past five years in operations on the mastoid sinus. It consists in raising by means of a broad chisel a flap which is made up of skin periosteum and bone over the mastoid sinus. The ear is drawn forward and the incision made posterior to the muscle down to the bone through the periosteum. The flap has its base toward the ear. The periosteum is freed only sufficiently to allow the chisel to map out three sides of the flap, which is then cut from the surface of the bone and turned back in contact with its covering of integument. The operation is completed upon the sinus. It is packed with gauze as usual, and an end brought out through the wound. A piece is cut from the bone flap with rongeur forceps sufficient to permit the easy passage of the gauze. The flap is then sewn in place.

The value of the results attained are to have a linear scar without deformity and to preserve the form of the bone. The operation is no more difficult or dangerous than the ordinary method, and can be performed rapidly. The pressure that can be applied where the sinus has been injured is greater with a greater aseptic security. The healing is by primary union, and the result from a cosmetic stand-point all that could be desired.

Traumatic Paralysis of the Shoulder and Arm.—MALLY (*Revue de Chirurgie*, October 10, 1899) gives the following as the results of traumatism that is acute in character :

1. Complete paralysis in the terminal fibres of the nerve.
2. Loss of cutaneous sensibility in the distribution of the nerve. This varies in different individuals.
3. Rapid muscular atrophy.
4. A special reaction of degeneration in the muscles.
5. A histological degeneration of nerve and muscle.

These traumatisms produce nearly all the neuropathological conditions. The lesion may involve the nerve in all degrees, from the terminal fibres in the hand to the larger trunks in the axilla, and even to the plexuses and nerve-roots. They may even reach the fibres in their medullary course. The derangements of sensation which accompany these paralyzes are very incon-

stant. They are not to be depended upon in judging of the motor involvement. The degrees of involvement are also very variable, from simple irritation to complete solution of continuity.

The histological lesions are divisible into three groups: 1. Lesions that are irritative, in which the condition of the muscles and nerves is ill defined and recalls the lesion of the atrophy of degeneration. This condition is transitory and does not tend either to increase for the worse or to rest stationary. It is the simple atrophy of paralyses by compression; it is difficult, as a consequence, to recognize it experimentally. 2. Degenerative changes which are represented by a return to embryonal conditions of the anatomical elements; it is this atrophy of degeneration that accompanies the section of nerves, their tearing or very severe compression. 3. Numerical atrophy, as described by Klippel, which consists in a diminution in the number but not in the volume of the anatomical elements—these are the grave reflex paralyses, together with certain myelopathies, traumatic or otherwise.

The electrical reaction which corresponds to each of these three pathological conditions is very distinct, and serves to differentiate between them at an early period. The simple atrophy has no relation either quantitative or qualitative to the electrical excitability, no matter what the degree of atrophy.

Degenerative atrophy is always accompanied by the reaction of degeneration. Finally, the numerical atrophy has a quantitative diminution only to the electrical excitability of two currents.

Hysterical paralyses can be readily diagnosed, especially if electrical tests are employed. The reflex paralyses are the only ones that can be readily confused.

Suture of the Fibrous Capsule in Fracture of the Patella.—VALLAS (*Revue de Chirurgie*, October, 1899) discusses the value of different methods of treating fractures of the patella, and, while not advancing it as an original idea, holds that both his experience and anatomical considerations justify him in believing that the suture of the fibrous capsule is as essential in those cases where surgical intervention is demanded as is the suture of the bone, and that it will, in the majority of instances, produce a better fibrous union if not bony union. It is better to employ it alone than suture of the bone alone.

He describes his method of treatment as follows: The fractures in which bone alone is involved are to be treated by compression, massage, and early movements, as in hæmarthrosis of the knee.

Those fractures of the patella that are accompanied by a rupture of the fibrous sheaths surrounding the bone require radical treatment. The operation of choice is an arthrotomy with a toilet of the articulation and suture of the lateral tears of the capsule. The suture of the bone is unnecessary.

It is often difficult to decide the particular case at hand. As a rule, a separation of three-quarters of an inch or more requires operation. All surgeons agree thus far. When the limb is extended such separation is impossible without a rupture of the lateral portion of the capsule. But it frequently happens that these portions of the capsule are ruptured without

so much displacement. These are the cases that give trouble later. The author has made it his practice to wait three or four days, treating these cases for the hæmarthrosis. At the end of this time the swelling and pain have decreased and more definite knowledge can be obtained. It is sometimes possible to recognize by palpation a lateral tear. At the end of the fourth day, if it is a simple fracture, the patient can lift the limb from the bed. If he can do so, operation is not necessary. If he cannot, operation should be undertaken at once.

PEDIATRICS.

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Cerebro-spinal Meningitis Complicating Measles.—FRANK W. ENGLAND (*Montreal Medical Journal*, November, 1899, p. 850) reports the case of a healthy boy, aged six years, who had a mild attack of measles. On the third day the eruption was beginning to fade, and the temperature and pulse had fallen to normal. On the following day he appeared somewhat dull and inclined to doze. There was some obstruction to breathing through the left nostril, which was blocked with a membranous exudation. The cervical glands, however, were not enlarged, the throat was clean, and the pulse and temperature remained normal. A few hours later, without the slightest warning, the child was seized with a severe general convulsion. This was followed by continued moaning and restlessness, with deepening stupor. A second convulsion occurred about ten hours after the first, slight in character, chiefly affecting the tongue, which was protruded in a jerky manner, with much frothing at the mouth. The temperature had risen to 103° F., and the pulse had become rapid.

After the convulsion restlessness was very marked. Two hours later the temperature reached 105° F., the stupor had increased, but the pupils still reacted to light and remained equally contracted. There was some rigidity of the muscles, but the head was not drawn back to any extent; there was neither squint nor any other sign of paralysis. No urine had been passed for twenty-four hours, and then only two and a half ounces were withdrawn by the catheter. The specimen was high colored, slightly acid, of specific gravity 1028, no albumin, no sugar, no casts. Convulsions recurred twenty-four hours after the second one, and from this time the child passed from one into another until death occurred, two hours thereafter and thirty-eight hours after the first convulsion. The temperature reached 109° F. before death. There was no vomiting throughout, and no cutaneous eruption. Two